

CLINICAL OCULAR MANIFESTATIONS IN SCHIZOPHRENIA

BY

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Abstract

The blink rate (B.R.) of 70 schizophrenic patients, 25 depressed patients, and 45 normal controls were compared. Schizophrenic patients have a significantly higher mean B.R. (31.8 ± 18.8 blinks/min) than controls (21.1 ± 10 b/min). Depressed patients have an intermediate mean B.R. (27.2 ± 15.4 b/min.). Never medicated, drug-free, and medicated schizophrenic patients have similar B.R. Blink rates were not significantly associated with any B.P.R.S. score, age, sex (except in depressed patients), or duration of the illness.

Poor eye contact, and staring were compared in schizophrenic and depressed patients. Both are commoner in schizophrenic patients but only severe degrees of poor eye contact could be found to be significantly higher in schizophrenia. An abnormal glabellar reflex was detected in 70% of never medicated and 47% of drug-free schizophrenic patients.

Because of the wide range of overlap with normal controls, B.R. cannot be considered a reliable clinical sign of schizophrenia. The low frequency of severe poor eye contact also limits the clinical usefulness of this sign. Staring in schizophrenia requires re-

definition in operational terms. Since B.R. and the glabellar reflex are influenced by dopaminergic mechanisms, our findings support the possibility of a dopaminergic hyperfunction in schizophrenia.

Introduction

Kraepelin (1919) was the first to call attention to a number of ocular features in dementia praecox. Ostow & Ostow (1945) reported an elevated blink rate in psychotic patients as compared with recovered psychotics, psychopaths, epileptics, and others. Thirty years later, several investigators reported an elevated blink rate in schizophrenia (Rechtschaffen et al., 1964; Brezinova and Kendell, 1977; Stevens, 1978; Cegalis and Sweeney, 1979; Cancro and Gelder, 1982; Karson, 1983; Karson and Berman, 1984). Karson (1979), did not find increased blinking in 13 neuroleptically naive schizophrenic patients. Again, Mackintosh et al. (1983) reported a reduced blink rate in chronic schizophrenia but attributed their findings to the effects of neuroleptic medication.

Converging evidence indicates that the disturbance in blink rate in schizophrenia can be attributed to central dopaminergic hyperfunction. In parkinsonism, which is a disease due to deficient dopaminergic activity blink rate is markedly reduced (Hall, 1945; Karson et al., 1982; Karson and Berman, 1984). The glabellar reflex is exaggerated in parkinsonism (i.e. polykinetic reflex eyelid closure). (Wartenberg, 1945; Pearce et al., 1968; Paulson & Gottlieb, 1968; Penders & Delawaide, 1971). The effects of drugs support the hypothesis of dopamine involvement in blinking whether spontaneous or induced. Dopamine agonists e.g. apomorphine and bromocriptine increase blinking in monkeys (Karson et al., 1981 a). while dopamine antagonists e.g. neuroleptics reduce blink rate in humans (Karson et al., 1981 b). Blink rate is elevated in tardive dyskinesia, which is a disorder presumed to be due to dopaminergic hypersensitivity (Karson et al., 1984).

A number of other ocular manifestations have been described in schizophrenia. These include abnormal smooth pursuit eye movement (Holzman et al., 1974; Shagass

et al., 1974; Holzman et al., 1976; Lipton et al., 1983), staring, pursuit breaks, lateral glances, as well as poor eye contact (Karson, 1979).

This study aims at tracing the value of a number of ocular manifestations as clinical signs of schizophrenia. If there is a relationship between blink rate and clinical parameters related to dopaminergic activity, the dopamine hypothesis of schizophrenia will be further substantiated.

Material and Method

Ninety-five patients were recruited for this study from the psychiatric outpatient and in-patient sections of Helwan Mental Hospital and Kasr El-Aini University Hospital. Patients who satisfied the diagnosis of schizophrenia (N=70) or depressive neurosis (N=25) were included (Table I). The diagnosis was made by the consensus of two psychiatrists according to the descriptions of the Egyptian Diagnostic Manual (DMP-I, 1975). Patients having ocular complaints or neurological manifestations were excluded. After reviewing the diagnosis, drug status, and duration of the illness cases were classified into the following groups:

- Group 1 :** 25 depressed patients including 8 who were drug-free on inclusion.
- Group 2 :** 10 subchronic and chronic schizophrenic patients who have never received neuroleptic medication.
- Group 3 :** 15 subchronic and chronic schizophrenic patients who were drug-free for at least 1.5 months prior to inclusion.
- Group 4 :** 45 subchronic and chronic schizophrenic patients on neuroleptic medication median dose equivalent to 425mg chlorpromazine, range 25-1760mg chlorpromazine daily.

Schizophrenic patients were divided in this manner in order to study the effects of neuroleptics on B.R. To our knowledge, this is the second report in the literature to study B.R. in drug naive schizophrenic patients. Depressed patients were included because of reports that depression affects B.R. (Mackintosh et al., 1983 Trethowan, and Anderson, 1973).

Forty-five normal adults without known neurological

or psychiatric complaints were included in this study as a control group chosen from the relatives of patients and members of staff.

Medicated and never-medicated schizophrenic patients were matched with controls as regards age and sex. Patients and controls were evaluated as follows:

(1) **Blink rate (B.R.):** was counted for three consecutive minutes during the clinical interview taking in consideration that:

- All subjects were unaware that their B.R. was being counted.
- Seating position, illumination, and time of interview were all nearly the same for all patients. Initially 2 observers equipped with stop-watches made the counts (Interrater agreement and reliability $r=0.99$ in 21 cases). Subsequently, counts were made by one observer who was not involved in the interview.

(2) **Staring:** was assessed using Karson's (1979) definition of staring as unusual penetration or fixation of gaze where:

0= Staring absent.

1= The observer is in doubt as to whether staring is present or absent.

2= Staring is definitely present.

(3) **Poor Eye Contact (Gaze Avoidance):**

0= Absent, the subject maintains eye-to-eye contact most of the time.

1= Doubtful, i.e. short periods of poor eye contact.

2= Evident i.e. poor eye contact for a period less than half the interview time.

3= Marked i.e. no eye-to-eye contact during most or whole of the interview.

(4) **Glabellar Reflex:** was studied in never-medicated and drug free schizophrenic patients only. The reflex was explained to the patient and the glabellar taps made at the rate of 1 tap/sec. for 30 seconds.

1. Normal response, habituation (no blink response) occurs after 2-10 taps.

2. No habituation, the blinking response persists despite regular repeated glabellar tapping.

3. No response, absent glabellar reflex.

4. Paroxysmal showers of blinks in response to glabellar tapping.

Table (I) Sociodemographic Data of the Sample

	G ₁		G ₂		G ₃		G ₄	
	N= 25		N= 10		N= 15		N= 45	
<u>Age</u>								
Range	15-50 y		18-40		18-60		16-56	
Mean	29.2 y.		27.8		34.4		30.5	
<u>Sex</u>								
	No	%	No	%	No	%	No	%
Male	16	64	8	80	12	80	35	77.8
Female	9	36	2	20	3	20	10	22.2
<u>Occupation</u>								
Employed	11	44	4	40	7	46.7	15	33.3
Unemployed	3	12	2	20	3	20.0	9	20.0
Student	7	28	3	30	2	13.3	15	33.3
House Wife	4	16	1	10	3	20.0	6	13.3
<u>Marital Status</u>								
Single	12	48	7	70	7	46.7	31	68.9
Married	11	44	3	30	7	46.7	11	24.4
Divorced	1	4	-	0	1	6.7	3	6.7
Widow	1	4	-	0	-	0.0	-	0.0

G₁ = Depressed neurotic patients

G₂ = Never-Medicated schizophrenic patients

G₃ = Drug-Free schizophrenic patients

G₄ = Medicated schizophrenic patients

- (5) The Brief Psychiatric Rating Scale (B.P.R.S.): we used the B.P.R.S. form modified by Bigelow and Murphy (1979). This form covers 23 operationally defined symptom areas i.e. 7 symptoms more than the original version (Overall and Gorham, 1962). We followed the interview technique described in Hamdi *et al.* (1984), utilizing two raters in each assessment interview. Interrater reliability proved satisfactory ($r = 0.86$ $P < 0.005$ for the total score).

Results

I- Blink Rate in Schizophrenic and Depressed Patients:

Schizophrenic patients have the highest mean blink rate (31.8 ± 18.8 b/min), controls have the lowest (21.1 ± 10 b/min), while depressed patients fall in between (27.2 ± 15.4 b/min). There is wide overlap among groups evident in the large standard deviation in each group.

Among the schizophrenia groups, drug free patients have the highest mean B.R. (33.4 ± 17), medicated patients have the lowest (30.9 ± 19.5), and never-medicated patients come in between (33.2 ± 19.4 b/min) Table (II).

Table (II) Blink Rate in Different Groups

The Group	No.	Mean($\pm$ SD) blinks/min
(G ₁) Depressed patients	25	27.2 ± 15.4 b/min
(G ₂) "Never medicated" Schizophrenics	10	33.2 ± 19.4
(G ₃) "Drug free" Schizophrenics	15	33.4 ± 17.0
(G ₄) "Medicated" Schizophrenics	45	30.9 ± 19.5
Normal Controls	45	21.1 ± 10.0
G ₂ + G ₃	25	33.3 ± 17.6
G ₂ + G ₃ + G ₄	70	31.8 ± 18.8

Table (III) Blink Rate: ANOVA Among Schizophrenics, Depressives and Controls.

Groups for ANOVA	Comparison by Scheffe test	Significance
$G_2 + G_3$ (Never medicated) + "Drug free" schizophrenics)(2) G_1 (depressed patients)	$G_2 + G_3$ & control	$F = 3.17$ Significant at $P < 0.05$
(3) G_4	G_4 & control	$F = 2.84$ Significant at $P < 0.05$
("Medicated" Schizophrenics)(4) Control	G_4 & G_1	$F = 0.79$ Non significant
	G_1 & control	$F = 0.70$ Non significant
$F = 4.23$	$G_2 + G_3$ & G_1	$F = 0.62$ Non significant
Significant at $P < 0.01$	$G_2 + G_3$ & G_4	$F = 0.13$ Non significant
$G_2 + G_3 + G_4$ (All schizophrenics)	$G_2 + G_3 + G_4$ & control	$F = 6.18$ Significant at $P < 0.05$
G_1 depressives	G_1 & control	$F = 1.19$ Non significant.
Control	$G_2 + G_3 + G_4$ & G_1	$F = 0.66$ Non significant
$F = 6.18$ Significant at $P < 0.01$		

During data analysis, we made a preliminary comparison between never-medicated and drug-free schizophrenic patients, which owing to the very similar means was insignificant ($t=0.03$, $df=23$). In subsequent statistical analyses we have considered these two groups as one. The distribution of statistical differences

is illustrated in table III. All the differences between schizophrenic patients and controls are significant, while the differences between depressive patients and controls and those between depressive patients and schizophrenic patients are non-significant.

II- Blink Rate and Clinical Variables in Schizophrenia:

(a) Blink rate and Symptomatology:

Thirty-three schizophrenic patients were assessed by the B.P.R.S. (Mean B.R. = 35.3 ± 21 b/min). Table IV illustrates their mean scores and degrees of correlation with B.R. Only a poor positive correlation exists between B.R. and total score ($r=0.25$) and schizophrenic symptoms ($r= 0.22$).

(b) Blink rate and subtypes of schizophrenia:

1. Paranoid patients ($N=35$) have a lower mean B.R. (30.3 ± 15.3 b/min) than non paranoid patients ($N= 25$, 35.3 ± 22.6 b/min, $t= -1.03$ df= 58, N.S.)
2. According to the degree of disorganization our cases were regrouped into early ($N=10$), intermediate ($N=35$), and late ($N=16$) cases. Late cases have the highest mean B.R. (37.1 ± 25 b/min) as compared to intermediate (30.1 ± 15 b/min), and early cases (29.6 ± 20 b/min) (one way ANOVA, $F= 0.8$, N.S.).
3. The traditional typological classification also yielded non-significant differences in B.R. ($F= 0.02$ df_{3,56}) (table V).

(c) Blink rate and neuroleptic medication:

The possibility that neuroleptics may reduce blink rates was studied in 42 patients*:

1. B.R. showed no correlation with drug dosage ($r=0.01$) when the latter is transformed into chlorpromazine equivalents (mean $\pm$ S.D. = 451 ± 333).
2. The differential effects of neuroleptics on B.R. in various subtypes of schizophrenia further subdivided according to drug status was also analyzed:
 - A significant difference emerged between unmedicated (44.5 ± 19 b/min) and medicated (25.8 ± 10 b/min)

* the dose of medication could not be determined in 3 cases.

paranoid schizophrenic patients ($t= 2.8$, $df= 17$, $P<0.01$).

- This significant difference was maintained when the unmedicated and medicated chronic undifferentiated cases were added on either side ($t= 2.55$, $df= 33$, $P< 0.02$).
- Medicated (36.1 ± 24 b/min) cases belonging to other types of schizophrenia e.g, catatonic, hebephrenic etc., did not differ significantly from unmedicated cases belonging to the same types (28.4 ± 18 b/min) ($t= 1.02$, $df= 33$, N.S.).

(d) Blink rate and duration of illness:

This variable was studied in schizophrenic ($N=66$) and depressed patients ($N=25$). Blink rate did not correlate with illness duration in either diagnostic entity ($r= 0.03$ & $r= 0.22$ respectively).

(e) Blink rate and age:

B.R. showed no positive correlation with increasing age in either schizophrenic patients ($r= 0.1$), depressed patients ($r= 0.07$), or controls ($r= 0.15$).

(f) Blink rate and sex:

Table VI illustrates the mean B.R. in males and females of our 3 main samples. A significant difference in B.R. is significantly higher in male than female depressed patients ($t= 2.1$, $df=23$, $P< 0.05$).

III- Poor Eye Contact:

30% of never-medicated schizophrenic patients showed severe poor eye contact compared to 8% of depressed patients. As a whole 25.7% of schizophrenic patients show severe poor eye contact. When compared to depressed patients, this difference is significant ($\chi^2 = 5.41$ $p<0.025$). 48.5% of schizophrenic patients exhibit some degree of poor eye contact compared to 40% of depressed patients (Table VIII).

IV- Staring:

Staring is highest among medicated schizophrenic patients (31.1%) and lowest among depressed patients (12%). There are no significant differences among the groups (Table VIII).

Table (IV) Different Scores of BPRS & Their Relation to Blink Rate in Schizophrenic Patients.

Syndrome	Items included	Mean Score + S.D.	Degree of
Total score	All items	34.9+6.14	r=0.25
Anxiety domain	Anxiety statements Tension	2.6+2.2	r=-0.17
Depression domain	Depressive mood Helplessness/hopelessness Guilt feeling Somatic concern Motor retardation	6.3+4.6	r=0.02
Paranoid domain	Hostility Suspiciousness Uncooperativeness Guilt feelings	7.6+3.7	r=0.18
Mania domain	Distractability Elated mood Motor hyperactivity Disorganised speech Grandiose statements	5.8+4.5	r=-0.12
Negative symptoms	Emotional withdrawal Blunted affect Motor retardation Mannerism and posturing	6.4+4.1	r=0.09
Positive Symptoms	Suspiciousness Grandiose statements Unusual thought content Hallucinatory statements Hallucinatory behaviour	10.6+5.2	r=0.03

Table (IV) [Cont.]

Syndrome	Items included	Mean Score ± S.D.	Degree of
Schizophrenia domain	Disorganized speech Grandiose statements Unusual thoughtcon- tent Hallucinatory state- ments Hallucinatory beha- viour Emotional withdrawal Blunted affect Motor retardation Mannerism & postur- ing	17.2±8.1	r=0.22

Table (V) Blink Rate of Different Classical Types of Schizophrenia

Paranoid		Hebephrenic		Ch. undiff.		Simple + Residual	
N	BR	N	BR	N	BR	N	BR
19	30.7±15	13	31.1±19.3	16	29.8±16	9	30.4±19.7

Table (VI) Blink Rate and Sex

	Schizophrenics	Depressives	Normals
Female	31.1±12.9	21.5±13.2	23.8±15.2
Male	32.0±19.6	29.9±14	20.4±10.5

Table (VII) Poor Eye Contact in Depressed & Schizophrenic Patients

Diagnostic Group	S C O R E S						Total
	0 + 1		2		3		
	N	%	N	%	N	%	N
Depressed Patients	15	60	8	32	2	8	25
Never Medicated							
Schizophrenics	6	60	1	10	3	30	10
Drug Free Schizo-							
phrenics	8	53.3	4	26.6	3	20	15
Medicated Schizo-							
phrenics	22	48.9	11	24.4	12	26.7	45
Drug Free + Never							
Medicated Schizo-							
phrenics	14	56	5	20	6	24	25
All Schizophrenics	36	51.4	16	22.9	18	25.7	70

V- Glabellar Reflex:

Habituation of the reflex and a no response were considered together under normal response. Failure of habituation and paroxysmal showers of blinks were both considered as abnormal responses and grouped together in order to facilitate statistical comparison. 70% of never-medicated schizophrenic patients showed an abnormal response compared to 46.6% of drug-free cases ($\chi^2 = 1.33$, N.S.)(Table IX).

Discussion

This study confirms earlier reports documenting a significantly elevated blink rate in schizophrenia. Schizophrenic patients have mean blink rates that are significantly higher than those of normal controls and neurotic depressed patients. Our figures however, are slightly higher than those reported by Karson and Berman (1984) (Table X).

Due to the marked overlap in B.R. among the groups

studied, an increased B.R. above a certain figure cannot be reliably used as a clinical sign of schizophrenia. This is more so if we consider the many environmental factors that alter B.R. e.g. reading, speech, concentration, lights, anxiety, etc (Hall, 1945, Karson et al., 1981 c).

The role of dopaminergic mechanisms in regulating B.R., and the relation of both to schizophrenia have been explored in various ways. First we compared patients who receive neuroleptics with those who do not, and we found almost no difference except when we compared medicated with unmedicated paranoid schizophrenic patients.

Crow (1980), has advanced the hypothesis that the chemical disturbance in schizophrenia (dopamine excess) is responsible for the production of positive symptoms e.g. delusions and hallucinations. A structural abnormality is presumed responsible for the production of negative symptoms e.g. apathy, poverty of thought. Our study contrary to that of Karson, gives some support to this view:

1. We have documented an increased B.R. in paranoid schizophrenia compared to normals while Karson and Berman, (1984) did not.
2. We documented a selective effect of medication on paranoid schizophrenic patients while Karson and Berman (1984), reported a more homogenous effect.

However, while Karson and Berman (1984) report a negative correlation between paranoia scores of the B.P.R.S. and the B.R. we found no positive correlation. These discrepancies warrant further studies that aim at detecting a differential effect of type or clinical features of the syndrome of schizophrenia on the rate of blinking.

If dopamine regulates B.R. (Karson and Berman, 1984) neuroleptics should reduce the latter uniformly. We were unable to prove such a general statement. We found no significant difference between medicated and drug-free schizophrenic patients, and we found no positive correlation between B.R. and drug dose calculated in

Table (VIII) Staring in Depressed & Schizophrenic Patients.

Diagnostic Group	Absent "0" or Doubt- "1" ful		Present		Total N
	N	%	N	%	
Depressed patients "Never Medicated"	22	88	3	12	25
Schizophrenics "Drug Free" Schizophre- nics	8	80	2	20	10
"Medicated" Schizophre- nics	11	73.3	4	26.7	15
"Never Medicated" + Drug Free Schizophrenic	31	68.9	14	31.1	45
All schizophrenics	19	76	6	24	25
	50	71.4	20	28.6	70

Table (IX) Glabellar Reflex in "Never Medicated" and "Drug Free" Schizophrenics.

Diagnostic Group	Normal response		Abnormal response		Total
	N	%	N	%	
"Never Medicated" Schizophrenics	3	30	7	70	10
"Drug Free" Schizophrenics	8	53.3	7	46.6	15

Table (X) Blink Rate Variables in Karson and Berman (1984) Compared to Present Study.

Variable	Karson and Berman	Rakhaw <u>et al</u>
<u>Blink Rate:</u>		
Controls	26 $\pm$ 15	21.1 $\pm$ 10
Depressed Pts.		27.2 $\pm$ 15.4
<u>Schizophrenic Pts:</u>		
Never-medicated		33 $\pm$ 19.4
Drug-free	30 $\pm$ 16	33.4 $\pm$ 17
Medicated	24 $\pm$ 12	30.9 $\pm$ 19.5
<u>correlation with B.P.R.S.:</u>		
+ve symptoms	r= 0.18	r= 0.03
Depressive symptoms	r= 0.42	r= 0.03
Paranoid symptoms	r= 0.34	r= 0.12
Schizophrenic symptoms		r= 0.22
<u>Type differences:</u>		
Paranoid Vs Non-Paranoid	N.S.	N.S.
Paranoid Vs Normals	N.S.	N.S.
Non-Paranoids Vs Normals	P < 0.01	P > 0.05

chloropromazine equivalents. The study of Karson et al. (1981 b), is methodologically sound in this respect since they compared the same patients with themselves before and after medication with a fixed dose of haloperidol. Furthermore, we could not be sure of the dose received, or compliance with medication, or the duration of treatment.

The relation between Blink rate and depression is not clear. Due to sample differences our results are not directly comparable to those of Mackintosh et al (1983), and Trethowan and Anderson (1973). Mackintosh

et al. (1983), reported an increased B.R. in heterogenous group of depressed patients, while Trethowan (1973), reported a decrease in retarded depressives. We report an insignificant increase in B.R. in neurotic depressed patients. What we can deduce from our findings is that B.R. is more a biologically determined trait and is not a feature of psychopathology in general.

The value of poor eye contact as a clinical sign of schizophrenia has not been corroborated in this study. Severe poor eye contact is significantly more frequent in schizophrenia, but it is apparent in less than 20% of patients. The assessment of this sign, is subject to cultural differences as well as subjective bias (Karson, 1979).

Staring is also an inaccurately defined sign. Defined as unusual fixation or penetration of gaze, we could not demonstrate a significant preponderance in schizophrenia. In this disorder staring may be considered more as an empty non-concentrated look in which the patient seems to fix on what is behind the observer rather than the observer himself.

Stevens (1978), was the first to report an abnormal glabellar reflex in schizophrenia. We confirm this in our study, this finding lends further support to a the hypothesis of dopaminergic dysfunction in schizophrenia.

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ظواهر العين الاكلينيكية فى الفصام

« موجز »

قارن هذا البحث معدل وميض العين فى ٨٠ مريضاً فصامياً بالإضافة إلى ٢٥ مريضاً بالاكْتئاب العصابى و ٤٥ فرداً من الأسوياء يشكلون عينة ضابطة .

وقد وجد أن متوسط وميض العين يرتفع ارتفاعاً دالاً فى المرضى الفصامين (٣١٨ + ١٨٨ ومضه/دقيقة) عنه فى الأسوياء (٢١١ + ١٠ ومضه/دقيقة) بينما يحتل مريضى الاكْتئاب مكاناً متوسطاً (٢٨٢ + ١٥٤ ومضه/دقيقة) .. وقد وجد أيضاً أن معدل وميض العين بتشابه فى كل من مجموعات المرضى الفصامين الذين يأخذون العقاقير المهدئة وأولئك الذين لم يأخذوها خلال الفترة السابقة على البحث ، وأولئك الذين لم يسبق لهم اطلاقاً العلاج بهذه العقاقير .. كما لا توجد علاقة ذات دلالة بين أى من الدرجة على المقياس الطب نفسى المختصر، أو السن أو الجنس (فيما عدا مريضى الاكْتئاب) أو مدة المرض من ناحية وبين معدل وميض العين من ناحية أخرى . ثم قارن هذا البحث بين مريضى الفصام ومريضى الاكْتئاب فيما يتعلق بقياس النقص فى الاتصال البصرى والتحديد .. ووجد ان كلتا العلامتين أكثر تواتراً فى مريضى الفصام ولكن الأختلاف ذو الدلالة يظهر فقط فى نسبة توتر نقص الاتصال البصرى الشديد، ووصل البحث أيضاً إلى أن ٨٠% من مريضى الفصام الذين لم يعالجوا أبداً بالعقاقير و ٤٨% من أولئك المرضى الذين لا يأخذون عقاقير وقت البحث يعانون من صورة أو أخرى من صور اضطراب منعكس مفرق الحاجبين نظراً للتداخل واسع المدى بين المرضى والأسوياء فى معدل وميض العين فإنه لا يمكن اعتبار هذه الظاهرة علامة يعتمد عليها من علامات الفصام .. كما أن النسبة البسيطة التى يظهر بها نقص الاتصال البصرى فى المرضى تقلل من الفائدة الاكلينيكية لهذه العلامة أيضاً، أما التحديق فى الفصام فقد وجد أنه يحتاج إلى إعادة تعريف بصورة عملية أكثر.

وتخلص البحث إلى تأييد احتمال زيادة نشاط الدوبامين فى الفصام بناء على احتمال تدخل هذا الموصل (الدوبامين) فى عملية التحكم فى كل من وميض العين ومنعكس مفرق الحاجبين وظهور اضطراب فى هذه الوظائف فى المرضى الفصامين .

ABSTRAIT

Manifestations Oculaires de la Schizophrénie

Le taux de 'battement de paupières' chez 70 malades schizophrènes, 25 malades dépressifs et 45 contrôles normaux a été sujet de comparaison. Les malades schizophrènes ont marqué un taux de battement de paupières moyen (31.8 ± 18.8 battement/min.) significativement plus élevé que le contrôle (21.1 ± 10 b/min). Les malades dépressifs ont marqué un taux moyen de battement intermédiaire (27.2 ± 15.4 b/min). Les malades schizophrènes n'ayant jamais reçu de médicaments, ceux chez qui les médicaments ont été arrêtés, ainsi que ceux qui sont sous traitement ont marqué un taux de battement semblable.

Le taux de battement de paupières n'a pas été associé significativement avec aucune valeur de B.P.R.S., âge, sexe (excepté chez les malades dépressifs), ou avec une durée de la maladie.

Le "contact restreint des yeux" ainsi que le "regard fixe" ont été comparés chez des malades schizophrènes et d'autres dépressifs. Les taux sont plus fréquents chez les malades schizophrènes, mais seulement les degrés prononcés de "contact restreint des yeux" ont été trouvés significativement plus élevés dans la

schizophrénie. Un réflex glabellairé anormal a été détecté chez 70% de malades schizophréniques n'ayant jamais reçu de médicaments et 47% de malades schizophréniques chez qui les médicaments ont été arrêtés.

Nous avons trouvé que le taux de battement de paupières ne peut pas être considéré comme un signe clinique solide de la schizophrénie. La basse fréquence des degrés prononcés de "contact restreint des yeux" limite l'utilité clinique de ce signe. Le regard fixe dans la schizophrénie demande une redéfinition en des termes opérationnels.

Vu que le taux de battement de paupières et le réflex glabellairé sont influencés par des mécanismes dopaminergiques, nos observations soutiennent la possibilité d'un hyperfonctionnement dopaminergique dans la schizophrénie.